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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, HAI L

ART UNIT PAPER NUMBER

2816

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/991,231

Applicant(s)

CAO ET AL.

Examiner

Hai L. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-11 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6 and 12 is/are rejected.
- 7) ☒ Claim(s) 4, 5 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendments***

1. The amendment received on 10/29/03 has been reviewed and considered with the following results:

As to the rejections to claims 1-12, under 35 U.S.C. 112, 1<sup>st</sup> paragraph. Applicant's arguments have been considered and found persuasive, as such; the rejections have been withdrawn.

As to the rejections to the claims, under 35 U.S.C. 112, 2<sup>nd</sup> paragraph. Applicant's amendments and arguments have been considered and found persuasive, as such; the rejections have been withdrawn. However, a new action on the merits appears below in view of Applicant's amendments.

As to the prior art rejections to the claims. Applicant's amendments and arguments have been considered and found persuasive, as such; the prior art rejections have been withdrawn. However, Applicant's amendments are moot in view of a new action on the merits appears below.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 3 is indefinite because the limitation “ the apparatus of claim 1, further comprising: ... a counter for counting the cycles of said clock signal” is misdescriptive. It is misdescriptive because the counter (51 in instant Fig.5) is part of the conditioning circuit (51-54 in instant Fig.5) that receives a clock signal (CLK) and outputs a first pulse signal (CLK\_CNT0) and a second pulse signal (CNT0) as recited in claim 1, rather than an additional element of the apparatus.

Claim 12 is similarly indefinite; note the above discussion with regard to claim 3.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guinea et al. (US 6,414,526; previously cited) in view of Ahuja (US 5,307,381).

With regard to claim 1, Guinea et al. discloses in Figs. 2-9 an apparatus comprising a tapped delay circuit (1) including a plurality of tapped delay cells (11-1N), the tapped delay circuit receiving a first pulse signal as input; a plurality of sampling modules (3 comprising FF2-FF15) concurrently receiving a second pulse signal (CKin) as input, each sampling module receiving a second pulse signal as input while the first pulse signal propagates through the tapped delay circuit, and each sampling module being clocked by a tapped output signal (CK2-CK15) from one of the plurality of tapped delay cells; and an encoder (5) for generating an output value

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(6). The reference circuit meets all the claimed limitations except for a conditioning circuit (51-54 in instant Fig.5) that receives a clock signal and outputs two pulse signals. Ahuja teaches in Fig.1 a circuit having a conditioning circuit (20) that receives a clock signal and outputs a first pulse signal (CLK) and a second pulse signal (another CLK) as recited in the claim. Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to utilize that conditioning circuit taught by Ahuja with the prior art (Figs. 2- 9) of Guinea et al. for the advantage of eliminating the clock skew in a clock signal distribution network of the apparatus.

With regard to claim 2, the output value inherently represents the process, voltage, and temperature conditions of a microchip. Since it is notoriously well known in the art that the delay locked loop circuits automatically compensate for variations in delay caused by the process, changing temperature and voltage conditions, by varying the delay line for generating a synchronized local clock of a microchip with a reference clock. Therefore, the output value inherently represents the process, voltage, and temperature conditions of the microchip.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guinea et al. in view of Ahuja as applied to claims 1, 2, 8, and 11 above, and further in view of the admitted prior art, Fig. 2 in the present application.

The above discussed the apparatus of the references meets all of the claimed limitations except for the plurality of tapped delay cells includes at least one DELC1V15 delay component. The admitted prior art in Fig. 2 shows a tapped delay circuit (10) including a plurality of tapped delay components DELC1V15 (SD1-SD8). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to utilize the delay components

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DELC1V15 taught by the admitted prior art in the delay circuit of Lee et al. for the advantage of obtaining a known delay time which is in each case optimally matched to its application.

*Allowable Subject Matter*

7. Claims 4, 5, and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not disclose or suggest an apparatus circuit, as recited in claim 4, comprising a conditioning circuit (51-54, A1); a tapped delay (60); a plurality of sampling modules (55's); an encoder (57); and specifically the limitation directed to a variation circuit (70 in instant Fig.10) for receiving the generated output value (PVT) and comparing the generated output value to a previously stored maximum output value (PVTMAX) and a previously stored minimum output value (PVTMIN), wherein, if the generated output value is less than the previously stored minimum output value, the generated output value is stored as the minimum output value, and wherein if the generated output value is greater than the maximum output value, the generated output value is stored as the maximum output value.

The prior art of record does not disclose or suggest an apparatus circuit, as recited in claim 7, comprising a conditioning circuit (51-54, A1); a tapped delay (60); a plurality of sampling modules (55's); an encoder (57); and specifically the limitation directed to a plurality of synchronizing elements (56s) for synchronizing the output signals from the plurality of sampling modules according to the clock signal, wherein the outputs of the plurality of synchronizing elements are input to the encoder.

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8. Claims 8-11 are allowed.


The prior art of record does not disclose or suggest a variable delay circuit, as recited in claim 8, comprising a variable delay component (10 in instant Fig.6) for delaying an input signal (CLK), and specifically the limitation directed to the variable delay component having a delay time that is controlled according to a control signal (CNT) which generated by a delay compensation circuit (50) for measuring the process, voltage, and temperature (PVT) conditions of a microchip and outputting a value representative of the measured PVT conditions as recited in the claim.

### *Conclusion*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai L. Nguyen whose telephone number is 571-272-1747 and Right Fax number is 571-273-1747. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone numbers for the organization where this application or proceeding is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1562.

HLN   
March 7, 2004

  
TIMOTHY P. CALLAHAN  
SUPERVISORY PATENT EXAMINER  
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